

**EOSDIS IV&V
Monthly Status Report
For the Period 6/1/96 to 6/30/96
(Deliverable 0203.12)**

July 15, 1996

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1. PROGRAMMATIC INFORMATION

1.1 IV&V Project Organization Chart

Exhibit 1-1 illustrates the current organizational structure of the EOSDIS IV&V team. The approximate number of personnel assigned to each technical task is also indicated.

1.2 Overview of Work Being Performed

a) Key Recent Accomplishments

- **Programmatic**

- Conducted internal IV&V Process Improvement Review to determine ways to provide greater value to the overall EOSDIS program.
- Provided NASA with inputs to Task SOWs for the period 7/1/96 through 9/30/96.
- Attended ECS Release B Delta CDR.
- Discussed with ESDIS SI&T Manager the potential benefits of using the Behavioral Simulation Environment for Systems Under Test.
- Participated in Findings Meeting with ESDIS Management on 7/1 - 7/2. Recommended that ECS Release A be deferred until March 1997 to allow developer to stabilize Release A requirements and configuration and to uniformly enforce engineering processes.
- Submitted Contract Self Evaluation on 6/28/96 for the current performance period.

- **Technical**

- Under Task 4B, delivered both the Integrated Support Environment (ISE) Element Version Description Document and the ISE Software Code on 6/14/96. Also, conducted the ISER2 Demonstration at Goddard on 6/25/96.
- Under Task 5B, submitted Second Quarter Model Assessment TAM as well as an unplanned TAM assessing the SCDO Requirements Functionality Shift. Also, conducted successful BONEs training class for ESDIS and CSC personnel.

Exhibit 1-1: Org Chart (Landscape)

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- Under Task 6B, submitted Release B Interim Release Verification and Validation Plan (IRVVP) and completed TAM reviewing SDPS and CSMS database design and schema specifications.
- Under Task 7, briefed Director of GSFC on ICE results and developed draft TAM on suggested metrics for future program monitoring. Also, participated in first CCM Executive Panel Meeting to review CCM concepts and development progress.
- Under Task 9B, delivered two TAMs analyzing ICDs involving ECS-DAAC interfaces. Also prepared Impact Analysis Reports for 10 CCRs.
- Under Task 11B, continued Test Version I&T activity, coordinating ECS resources for LaRC to SDPF ingest interface testing. Also, delivered preliminary and draft versions of the Integration and Test Program Plan.

Additional status information on each of the technical tasks can be found in Appendix A.

b) New/Proposed Task Assignments

- None.

1.3 Overview of Schedule Status

Exhibit 1-2 presents the latest, high level milestone chart (i.e., dated July 11, 1996) for all technical tasks assigned on the EOSDIS IV&V contract. In addition, Exhibit 1-3 lists in chronological order the deliverables/milestones associated with the contract for both the current month and the next month, as well as the status of each deliverable/milestone.

1.4 Performance Assurance Activities

- ¥ Four personnel attended Goddard Learning Center in June to take courses in UNIX, Sybase SQL, TCP/IP Networks, and Database Concepts. Twelve other personnel are scheduled to take contract-related courses in the near future.
- ¥ Three personnel attended a Code 500-sponsored seminar on System Testing and Quality Assurance Techniques on 6/20 - 6/21.
- ¥ Twelve personnel will be trained at the Hughes facility in the use of Load Runner and X-Runner on 7/13 - 7/11.

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Exhibit 1-2: Milestone Chart (Landscape)

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Expected Date Due	Dependency	Milestone/Deliverable	Task #	Status*	Comments
6/4/96		CCM Data Distribution Model	7	D	Complete source documentation not available yet. Currently discussing schedule modifications with Dr. Barkstrom.
6/5/96	Rel B CDR + 6 Weeks	Release B IRVVP (Final)	6B	C	Submitted on time.
6/14/96		ISE Software Code - Update	4B	C	Submitted on time.
6/14/96		ISE Element Version Description - Update	4B	C	Submitted on time.
6/14/96		ECS Confidence Plan White Paper (Review)	11B	C	Submitted on time.
6/27/96		CCM Staffing Model	7	D	Complete source documentation not available yet. Currently discussing schedule modifications with Dr. Barkstrom.
6/25/96		ISE Release 2 Demonstration (ISER2)	4B	C	Conducted on time.
6/28/96		ECS Release B Rqmts Analysis TAMs (Total of 3)	5B	C	Submitted 2 months ahead of schedule.
6/28/96		Second Quarter ECS Model Assessment TAMs (Total of 3)	5B	C	Submitted on time.
6/28/96		Task 6B Monthly Metric Report	6B	C	Submitted ahead of schedule on 6/24/96.
7/5/96		ISE M&O Status Report	4C	IP	
7/9/96		ECS Confidence Plan White Paper (Baseline)	11B	IP	Delivery schedule undergoing major revision.
7/31/96		Task 6C Monthly Metric Report	6C	IP	
7/31/96		CCM Development Model	7	D	Complete source documentation not available yet. Currently discussing schedule modifications with Dr. Barkstrom.
7/31/96		EOSDIS ICD Issue Reports	9D	O	
7/31/96		EGS Version 1 I&T Procedures (Prelim)	11B	O	

* C = Completed, IP = In Process, O = Open, D = Delayed, CX = Canceled

Note: *Italics* indicates tasks that are not yet activated.

EXHIBIT 1-3: Status of Milestones/Deliverables

- In July, two personnel will receive Tivoli training. Tivoli is the tool that will be used by Hughes to smoothly transition from Release A to Release B. Tivoli will be introduced into the ECS in Release A.1.

- Three personnel are signed up to attend a TDRSS Orientation Class at the Networks Technical Training Facility on 9/17/96.

1.5 Major Short Term Activities Planned

- **Program-wide Activities**

- Consider ways to consolidate the 10 existing IV&V tasks into 2 or 3 super tasks by 10/1/96. Provide inputs to new super task SOWs.
- Present benefits of using the Behavioral Simulation Environment for Systems Under Test to NASA management at the Software IV&V Facility in WV.
- Prepare for next Findings Meeting with ESDIS Management, currently scheduled for 8/20/96.

- **Task-specific Activities**

- For Task 4B, submit ISE Maintenance and Operations Status Report, and release new client/server version of the Project Issue Tracking System (PITS) as well as an initial PITS WWW Browser query capability.
- For Task 5B, work on TAM addressing ECS CCR Requirements Baseline Corrections, and continue dialog with ESDIS QA and Hughes to resolve requirements shift and trace issues.
- For Task 6B, submit TAM analyzing the DDSRV and SDSRV CSCIs of the Data Server Subsystem, and begin traceability analysis of Release A Level 4 requirements to test cases for Phase 1 and 2 tests.
- For Task 7, finalize TAM on suggested metrics based on ICE study and complete initial version of CCM Hardware Model.
- For Task 9B, review two EDOS ICDs and all CCRs received in the coming month. Also, review CCRs for major revisions to ICDs involving ECS-DAAC interfaces.
- For Task 11B, continue meetings with AM-1, Landsat-7, and TRMM/TSDIS personnel to define joint test objectives/plans for Version 1 tests. Also, work on initial delivery of the individual test packages for the I&T program.

2. FINANCIAL/CONTRACTUAL INFORMATION

**This Section
Has Been Removed
Due to Proprietary Content.**

APPENDIX A

TECHNICAL TASK STATUS INFORMATION

Task # 4B: IV&V Infrastructure and Tool Development

a) Task Accomplishments

- Conducted the Integrated Support Environment Release 2 (ISER2) Demonstration at Goddard on 6/25/96.
- Delivered both the ISE Element Version Description Document and the ISE Software Code on 6/14/96.
- Continued work on the Project Issue Tracking System (PITS) WWW Browser query capability.
- Continued work on the development of Test Management Database (TMDB) test thread, case, and execution metrics reporting.
- Executed queries against RTM to determine some change metrics for the new 6/14/96 baseline.
- Continued maintenance for the EOSDIS IV&V Homepage and EGS I&T Homepage.

b) Issues/Concerns

- None.

c) Subcontractor Performance

- EWA performance has been good, despite some staff transitioning problems. Specific activities included maintenance of the EOSDIS IV&V and EGS I&T Homepages, data entry and conversion activities associated with the ISE, and continued development of the PITS WWW Browser.

d) Planned Activities

- Submit the ISE Maintenance and Operations Status Report on 7/5/96.
- Install RTM Version 3.0 in preparation for transition from Version 2.3.
- Release an initial PITS WWW Browser query capability.
- Release a new client/server version of the PITS.
- Support the definition and collection of EGS I&T metrics by leveraging TMDB capabilities.

- Continue refining, developing, and maintaining the ARDB, PITS, and TMDB client/server tools, as well as the IV&V and SI&T Homepages.
- Support program meetings and briefings as required.

Task # 5B: Requirements Analysis and Traceability

a) Task Accomplishments

- Submitted Second Quarter Model Assessment TAM on 6/28/96, as scheduled.
- Delivered SCDO Requirements Functionality Shift Assessment (Release A to Release B) TAM on 6/28/96. This was an additional effort not planned in the original task SOW. The analysis used the RBRs and the traced Level 4 requirements to identify the partial or complete shift of functionality from Release A between the 12/95 and 5/96 RTM releases. (See Attachment 5-1.) The TAM also provided an analysis of the functionality shift, and the potential impact on TRMM mission.
- Reviewed the June Release B 304 requirements specification for technical baseline discrepancies.
- Conducted successful BONEs training class for personnel from ESDIS (C. Daly, D. Jamison, M. Simons) and CSC (D. Boone and others).
- Submitted Software Development Plan for the Behavioral Simulation Environment for Systems Under Test.

b) Issues/Concerns

- We need additional information from Hughes to perform a comprehensive modeling assessment. We are trying to resolve this issue through Chris Daly.

c) Subcontractor Performance

- Subcontractor performance has been very good.

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d) Planned Activities

- Accelerate the dialog between IV&V, ESDIS QA, and Hughes to resolve requirements shift and trace issues.
- Work on TAM addressing ECS CCR Requirements Baseline Corrections.
- Further define Modeling Subtask with input from C. Daly on Hughes information availability.
- Support program meetings and briefings as required.

Task # 6B: ECS Development Analysis

a) Task Accomplishments

- Completed Release B IRVVP and submitted to ESDIS on 6/4/96.
- Completed review of SDPS and CSMS database design and schema specifications. Documented findings in TAM submitted on 6/14/96.
- Continued ECS Release A test witnessing. Attended Phase 2 mini-TRR covering SDPS PDPS and Data Server tests.
- Initiated ECS Release A schedule analysis of code and unit test and I&T activities to determine schedule trends and potential impacts.
- Generated SDPS, CSMS, and FOS design and test witnessing metrics based on the 6/14/96 release of RTM, the StP design repository, and test documentation. Documented results in Task 6 Monthly Metrics Report submitted on 6/24/96.
- Attended Release B Delta CDR for Data Server Subsystem on 6/13 - 6/14. Began design analysis of Science Data Server and Document Data Server CSCIs to be documented in TAM due on 7/8/96.

b) Issues/Concerns

- Traceability analysis of Release A Level 4 requirements to test cases for Phase 1 and 2 tests did not begin as planned because Hughes did not provide the required data in the 6/14/96 RTM release, as anticipated. A work-around plan is in process.

c) Subcontractor Performance

- Subcontractor performance has been good.

d) Planned Activities

- Continue ECS Release A test witnessing activities. Begin traceability analysis of Release A Level 4 requirements to test cases for Phase 1 and 2 tests.
- Complete analysis of DDSRV and SDSRV CSCIs of Data Server Subsystem presented at Release B Delta CDR. Submit TAM on 7/8/96.
- Generate updated metrics for July to be submitted in Monthly Metrics Report.
- Support program meetings and briefings as required.

Task # 7: Programmatic and Process Analysis

a) Task Accomplishments

- Briefed Director of GSFC on ICE results on 6/3/96.
- Based on ICE study, developed draft TAM on suggested metrics for future program monitoring. Delivered draft to IV&V COTR on 6/28/96 for review.
- On 6/4/96, briefed ESDIS Management and members of the ECS development team on the CCM concept, scope, and state of model development to date.
- Participated in first CCM Executive Panel Meeting on 6/19/96 to review CCM concepts and development progress. Established development/communications strategy for next several months. Attendees included Dr. Barkstrom, ESDIS Management, and Intermetrics development team personnel.
- Continued revising data structures associated with overall model, based on latest inputs from Dr. Barkstrom. Also, continued developing model output files and assessing extent to which model will be able to provide graphic representations of data.
- Continued concept work on both CCM Hardware and User Models.
- Continued porting CCM prototype to the Windows NT environment and revising the GUI.

b) Issues/Concerns

- The deliverable schedule for the CCM development effort needs to be revisited, since the expected source documentation is not as yet available. IV&V has been in contact with Dr. Bruce Barkstrom to try to resolve this issue.

c) Subcontractor Performance

- Not Applicable.

d) Planned Activities

- Finalize TAM on suggested metrics based on ICE study.
- Complete initial version of CCM Hardware Model by early August, including high level user documentation.
- Participate in seminar-demo of CCM Hardware Model to be held at both Langley and Goddard in the August/September time frame.
- Continue development of CCM User Model.
- Continue effort to rehost CCM to the Windows NT environment.
- Participate in next CCM Executive Panel Meeting, scheduled for early September.
- Support other program meetings and briefings as required.

Task # 9B: Key Interface Analysis

a) Task Accomplishments

- Reviewed and prepared TAMs for the following documents:

TAM #	Delivery Date	Title
09-064	6/14/96	Technical Analysis of the ICD between ECS and LaRC DAAC (May)
09-065	6/18/96	Technical Analysis of the ICD between ECS and GSFC DAAC (May)

- Evaluated and prepared Impact Analysis Reports for the following CCRs:

CCR #	CCR Title
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505-41-19-002 (505-41-43-002)	Add/Remove NOAA Ancillary Data Sets
505-41-37-002	Revise EOSDIS ECS Version 0 ICD to Release B I/F
505-41-39-001	Baseline the LaRC DAAC ICD
505-01-10-002	MTPE Data Distribution Requirement
505-41-40-001	Baseline the ECS-GSFC DAAC ICD
505-41-22-001	Baseline the ECS and SAGE III MOC IRD
505-01-11-001	Baseline ESDIS AM ASTER PIP Ground Data System Vol. II
505-41-42-001-B	Baseline the ECS to TSDIS ICD
505-41-13-005	Landsat 7 Engineering Data

- Completed review of ICD-106 (LMMC) ICD Data Format Control Document for EOS-AM spacecraft and provided e-mail comments.
- Worked with PITS-ICWG developers to modify and debug the issue summary report for 6/18/96 delivery. Modified contents of all current issues (80) to correspond to new report format. Also, presented PITS-ICWG Open Issues Report to D. DeVito and the ICWG on 6/18/96. Walked through modified contents and format.

b) Issues/Concerns

- The workload for Task 9 far exceeds our available resources. This situation will be further aggravated by the impending departure of a staff member. We are planning to share resources from another task until we find a suitable replacement.

c) Subcontractor Performance

- CTA is the task lead for this effort. Their performance has been very good.

d) Planned Activities

- Review EDOS ICDs as received (2 expected).
- Review all CCRs received in the coming month. Also, review CCRs for major revisions to the ECS-Langley DAAC ICD, ECS-SCF ICD, and possibly the ECS-GSFC DAAC ICD.

- Complete PITS entry for issues identified in Version 0, Langley DAAC, and NOAA ICDs.
- Continue data entry into PITS ICWG repository, and present at next ICWG status meeting scheduled for 7/16/96.
- Support ICWG and CCB meetings to discuss the CCRs.
- Support program meetings and briefings as required.

Task # 11B: EOS Ground System Integration and Test

a) Task Accomplishments

- Continued to support phasing of Component Acceptance Test activities into new Confidence Test Program.
- Continued Test Version I&T activity. Coordinated ECS resources for LaRC to SDPF ingest interface testing. Supported TSDIS ECS testing meetings.
- Delivered preliminary and draft versions of the Integration and Test Program Plan.
- Continued Landsat 7, AM-1, and TRMM technical interchange and MRTT/SITWG meetings.
- Supported ongoing analysis of joint test efforts for TRMM and Landsat 7. AM-1 efforts completed initial definition of goals, objectives and responsibilities for ECT tests during this period.
- Developed presentation materials for TIC TOC briefing on I&T Program at GSFC.
- Supplied comments to the Network Test Manager (Dinah Daughtridge) on the Network Test Plan.
- Continued to support ESDIS ERB to resolve DRs and develop solutions for system test issues.

b) Issues/Concerns

- None.

c) Subcontractor Performance

- Subcontractor performance has been good.

d) Planned Activities

- Continue meetings with AM-1, Landsat 7, and TRMM/TSDIS personnel to define joint test objectives and plans for Version 1 tests.
- Receive and incorporate comments to the I&T Program Plan.
- Work on initial delivery of the individual test packages for the I&T program.
- Test the ECS (GSFC DAAC) to TSDIS ingest interface.
- Obtain training on X-Runner, Loadrunner, and Tivoli for Task 11 members. Also, continue staff technical specialty planning and detailed ECS/EGS system training. Coordinate ETS training.
- Support program briefings as required.

**Appendices B and C
have been removed
due to proprietary content.**